

ABSTRACT OF THE DISCLOSURE

A guided wave radar transmitter comprises a probe defining a transmission line including a relatively low impedance target marker above an expected sensing region of the probe. A pulse circuit is connected to the probe for generating pulses on the transmission line and receiving a reflected signal from the transmission line. The reflected signal selectively includes a target pulse representing the target marker and a level pulse representing material along the length of the probe. A controller is operatively connected to the pulse circuit. The controller normally operates at a relatively low gain to determine a level time to the level pulse to determine material level, and periodically operates at a relatively high gain to determine a target time to the target pulse. The target time is used to compensate the level time for properties of vapor above the material level.